AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A microchip comprising:

at least one main separation channel formed in a channel forming medium, said main separation channel containing microfluids when in operation;

at least one detecting channel containing a first conductive element comprising a wire, fiber or paste for performing electrochemical detection, said detecting channel being formed in said channel forming medium and adjoining said main separation channel, wherein said main separation channel and said detecting channel intersect; and

at least one reservoir containing a second conductive element comprising a wire, fiber or paste for serving as a reference to said first conductive element, said reservoir being formed in said channel forming medium and containing waste when in operation.

2. (Cancelled).

3. (Currently amended) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at a point defined as an angle of approximately a 90° ~~angle~~.

4. (Currently amended) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at a point defined as an angle of less than a 90° ~~angle~~.

5. (Currently amended) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at a point defined as an angle of greater than a 90° ~~angle~~.

6. (Currently amended) The microchip of claim 1, wherein said detecting channel intersects said main separation channel at any ~~an end~~ point of said main channel.

7. (Currently amended) The microchip of claim 1, wherein said channel forming medium comprises a polymeric material comprising poly(dimethylsiloxane).

8. (Currently amended) The microchip of claim 1, wherein said channel forming medium comprises a polymeric material comprising poly(methylmethacrylate).

9. (Currently amended) The microchip of claim 1, wherein at least one of aid conductive element and second conductive element comprises a gold wire.

10. (Currently amended) The microchip of claim 1, wherein at least one of aid conductive element and second conductive element comprises a platinum wire.

11. (Currently amended) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a palladium wire.

12. (Currently amended) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a copper wire.

13. (Currently amended). The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a nickle wire.

14. (Currently amended) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a nickle-alloy wire.

15. (Currently amended) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a carbon fiber.

16. (Currently amended) The microchip of claim 1, wherein at least one of said first conductive element and said second conductive element comprises a carbon paste.

17. (Currently amended) The microchip of claim 1, wherein ~~said~~ at least one detecting channel comprises a plurality of detecting channels.

18. (Currently amended) A method of forming a microchip comprising:

forming a main separation channel in a channel forming medium;

forming a detecting channel in a channel forming medium, wherein said detecting channel adjoins said main channel;

~~forming at least one reservoir in said channel forming medium, wherein said reservoir adjoins at least one of said main channel and said detecting channel;~~

placing a first conductive element comprising a wire, fiber or paste in said detecting channel; and

placing a second conductive element comprising a wire, fiber or paste in said reservoir or said detecting channel to provide ~~thereby form~~ said microchip.

19. (Original) The method of claim 18, further comprising joining said channel forming medium with at least one sealing medium.

20. (Currently amended) The method of claim 18, wherein said main separation channel, said detecting channel, and said reservoir are formed in said channel forming medium by molding.

21. (Original) The method of claim 18, wherein said detecting channel intersects said main channel.

22. (Currently amended) The method of claim 18, wherein said detecting channel intersects said main separation channel at approximately a 90° angle.

23. (Currently amended) The method of claim 18, wherein said detecting channel intersects said main separation channel at less than a 90° angle.

24. (Currently amended) The method of claim 18, wherein said detecting channel intersects said main separation channel at greater than a 90° angle.

25. (Currently amended) The method of claim 18, wherein said detecting channel intersects said main separation channel at an end point of said channel.

26. (Currently amended) The method of claim 18, wherein said channel forming medium comprises a polymeric material ~~poly(dimethylsiloxane)~~.

27. (Currently amended) The method of claim ~~18~~, 26 wherein said polymeric material ~~channel forming medium~~ comprises poly (methylmethacrylate) or poly (dimethylsiloxane).

28. (Currently amended) The method of claim 18, wherein at least one ~~of said~~ first conductive element and ~~said~~ second conductive element comprises a gold, platinum, palladium, copper, nickle, or nickle alloy wire, carbon fiber or carbon paste.

29. (Currently amended) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a platinum wire.

30. (Currently amended) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a palladium wire.

31. (Currently amended) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a copper wire.

32. (Currently amended) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a nickle wire.

33. (Currently amended) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a nickle-alloy wire

34. (Currently amended) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises a carbon fiber.

35. (Original) The method of claim 18, wherein at least one of said first conductive element and said second conductive element comprises carbon paste.

36. (Original) The method of claim 18, wherein said at least one detecting channel comprises a plurality of detecting channels.

37. (Currently amended) A method of performing electrophoresis comprising:

attaching ~~at least~~ a first conductive element and a second conductive element to a microchip having at least one ~~biologic~~ microfluid thereon, wherein said microchip comprises:

at least one main separation channel formed in a channel forming medium, said main channel containing at least one ~~biologic~~ microfluid;

at least one detecting channel containing ~~said~~ a first conductive wire, fiber or paste ~~element~~ for performing electrochemical detection, said detecting channel being formed in said channel forming medium and adjoining said main channel; and

at least one reservoir containing said second conductive element ~~for serving as~~ to provide a reference to said first conductive element, said reservoir being formed in said channel forming medium and containing ~~biologic~~ waste; and

applying ~~either~~ continuous or pulsed amperometric detection to said microchip using said conductive elements, wherein ~~to thereby cause biologic~~ specimens within said ~~biologic~~ microfluid ~~to~~ migrate toward said first conductive [element] wire and, when in electrical contact with said first conductive wire, fiber or paste [element], ~~to~~ generate a measurable signal.

38. (Original) The method of claim 37, wherein said detecting channel intersects said main channel.

39. (Currently amended) The method of claim 37, wherein said detecting channel intersects said main channel at an end point, at an angle of approximately [a] 90° [angle].

40. (Currently amended) The method of claim 37, wherein said detecting channel intersects said main channel at an angle of less than 90° [angle].

41. (Currently amended) The method of claim 37, wherein said detecting channel intersects said main channel at an angle of greater than 90° [angle].

42. (Original) The method of claim 37, wherein said detecting channel intersects said main channel at an end point of said main channel.

43. (Currently amended) The method of claim 37, wherein said channel forming medium comprises a polymeric material ~~poly (dimethylsiloxane)~~.

44. (Currently amended) The method of claim [37] 45, wherein said channel forming medium comprises poly (methylmethacrylate) or poly (dimethylsiloxane).

45. (Currently amended) The method of claim 37, wherein at least one ~~of said~~ first conductive element and ~~said~~ second conductive element comprise[s] gold, platinum, palladium, copper, nickle, nickle alloy, carbon fiber or carbon paste.

46. (Currently amended) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a platinum wire.

47. (Currently amended) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a palladium wire.

48. (Currently amended) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a copper wire.

49. (Currently amended) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a nickle wire.

50. (Currently amended) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises a nickle-alloy wire.

51. (Original) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises carbon fiber.

52. (Original) The method of claim 37, wherein at least one of said first conductive element and said second conductive element comprises carbon paste.

53. (Original) The method of claim 37, wherein said at least one detecting channel comprises a plurality of detecting channels.

54. (Currently amended) The method of claim 37, wherein said ~~biologic~~ specimens comprises a carbohydrate, an amino acid, a protein, an antibiotic, levoglucosan, creatinine, creatine, uric acid, an amine, a thiol, an alcohol, or a mixture thereof .

55. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise an amino acid.

56. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise a protein.

57. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise an antibiotic.

58. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise levoglucosan.

59. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise creatinine.

60. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise creatine.

61. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise uric acid.

62. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise an amine.

63. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise a thiol.

64. (Currently amended) The method of claim 37, wherein said ~~biological~~ specimens comprise an alcohol.

65. (Currently amended) The method of claim 37, wherein said continuous or pulsed amperometic detection provides an electrical potential across said microchip to ~~all for~~ provide separation and detection of ~~said~~ at least one specimen in said ~~biologic~~ microfluid.

66. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises approximately +100V to approximately +5000V.

67. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises +800V to approximately +2000V.

68. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises approximately +1000V.

69. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises approximately +1700V.

70. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises approximately +0.4V to approximately +1.0V.

71. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises approximately +0.5V.

72. (Currently amended) The method of claim 65, wherein said electrical potential applied for separating the ~~biologic~~ specimens contained in said ~~at least one biologic~~ microfluid comprises approximately +0.7V.

73. (Currently amended) The method of claim 37, further comprising injecting said ~~biologic~~ microfluid into a channel of said microchip at an electrical potential of approximately +100 V, or approximately +500V.

74. (Original) The method of claim 73, wherein the injecting step is performed for between approximately 1 second and approximately 1 minute.

75. (Original) The method of claim 73, wherein the injecting step is performed for between approximately 7 seconds.

76. (Currently amended) The method of claim 37, further comprising injecting said ~~biologic~~ microfluid into a channel of said microchip at an electrical potential of approximately +160V.

77. (Currently amended) The method of claim 37, further comprising injecting said ~~biologic~~ microfluid into a channel of said microchip at an electrical potential of approximately ~~+~~410V.

78. (Currently amended) The method of claim 37, further providing, in combination with said at least one ~~biologic~~ microfluid, an electrolyte solution.

79. (Original) The method of claim 78, wherein said electrolyte solution comprises borate.

80. (Currently amended) The method of claim 78, wherein said electrolyte solution comprises a pH of approximately 7.1 ~~9~~ to approximately 13 or a pH of approximately 9.45, or a pH of approximately 11, or a pH of approximately 12.

81. (Canceled).

82. (Canceled).

83. (Canceled).

84. (Canceled).

Please add the following claims:

85. (New) The method of claim 54 wherein the specimen comprises glycated hemoglobin.

86. (New) The method of claim 54 wherein the specimen comprises hemocysteine.

87. (New) The method of claim 54 wherein the specimen comprises uric acid.